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the most important things ever done by historians. Henceforth, for the next fifteen centuries and more, there was one sure path back to the origin of the world, a path along the Jewish past, and marked out by the absolute laws of mathematics and revelation. An account of how this came about will carry us back into that complicated problem of the measurement of time, which we have considered before, in its general aspects. Now, however, we come upon the work of those who gave us our own time-reckoning, and who in doing so molded the conception of world history for the western world more than any other students or masters of history.

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(*To be concluded.*)

A THEORY OF KNOWLEDGE WHICH FOREGOES METAPHYSICS. IN REPLY TO DR. SCHILLER

THERE are whole ranges of man's effort toward intelligent insight which, even in our day, are rendered taboo by the sign and bugbear Speculation. The advance in the sciences during recent decades has done much, it is true, to hearten and reassure the timid that the implied curse is not so fearsome. The mathematician leading the way, and physics, chemistry, biology following, have transformed the unapproachable place into a veritable treasure-house of their offerings. Even the Gradgrind type of Empiricist is no longer taken aback by supersensuous biophors, transcendental functions, or symmetrical points in muscles. But this resolving of the taboo is to be noted chiefly on one avenue of approach to the dreaded Metaphysic. It is recognized that the *outcome* of empirical investigation is usually metaphysical entities and supersensuous relations such as electrons, a perfectly elastic medium, or the relation called heredity. The fact that more mathematics can be used in dealing with certain phenomena than in those of recurrent and age-weary problems is not one to blind the modern physicist or biologist to the character of his conclusions, as frankly a projection of scientific imagination in accord with available data.

But is it less frequently recognized that the general assumptions and methods employed in any investigation are themselves hypotheses which also determine the resultant interpretation. Even the simple-minded would, it is true, realize that the method which admits two and only two terms (say matter and motion) presupposes that other assumed entities can be reduced to these terms. A method which interprets chemical qualities as groupings of "constituent" atoms or

electrons assumes that spatial relationships are functions of molecular structure. The psychologist who interprets mental phenomena in terms of the theory of biological survival not only construes human mental processes in terms of physiology; historically he has shown himself scornful, if not oblivious, of the mental processes called philosophical problems. Whether we start with simple belief in "hard sensations" (Bertrand Russell), and depend upon the mathematical postulates of Euclid or of Einstein, our process of thought will be *a priori* in the sense of committing ourselves for the time being to a whole system of interpretations. And that is why every possible assumption is so important to the open-minded investigator.

Now the tracing of implications in any given method is not necessarily a judgment concerning its validity. It may be called an effort to "save appearances," to avoid dogmatic suppression, it may be to use that method more intelligently. Should an inherent absurdity, a logical contradiction, or a group of data unaccounted for, be made known to such an investigator he would hardly proceed to a personal charge, much less declare your data irrelevant and your conclusions errors—because you did not use his method and start with his assumptions! To do so would imply a dogmatism comporting with omniscience in special revelation.

The present writer, in a paper entitled "A Mediæval Aspect of Pragmatism"¹ endeavored to set forth certain implications of the familiar doctrine that in any interpretation the mark of validity is a certain definable ethical quality in its product. It was an effort to determine what would result logically if such a method were coordinated with another more commonly recognized assumption which maintains that in the act of knowing things they are assumed to bear definite relationships to our mental processes. It was argued that in case we accept both assumptions we assert a functional relationship between the things known and the ethical quality of the knowledge process. This conclusion was characterized as an inference resulting from the hypothetical postulation of both principles. It aimed for the kind of logical adequacy represented in Euclidian demonstration, the premises having been assumed.

Now in a paper entitled "Methodological Teleology"² Dr. Schiller of Oxford "repudiates . . . all Professor Warbeke's pre-suppositions and contentions as a brood of misconceptions hatched out of a mare's nest" (p. 550). Pragmatism makes no assumptions whatsoever. It need not burden itself with anything supposed to be existent, with relationships between mental states and the things

¹ This JOURNAL, Vol. XVI., No. 8.

² This JOURNAL, Vol. XVI., No. 20.

they are supposed to cognize, or with the qualitative characters of mental processes which are said to be cognitive. A *method* as such is not a dogma; a theory of knowledge is not metaphysic. If anyone presumes to maintain that pragmatism is a theory of relationships between mental processes and things known, or that these mental states have recognizable character, he "presupposes an unpragmatic logic and an unpragmatic metaphysic." The inferences drawn are stigmatized as a "worship of Euclidian proof," and the outcome of a naïve metaphysic "which imagines that absolute knowledge of reality can be taken for granted" (549).

The present writer will gladly submit to the reader's judgment the question of whether he "takes absolute truth for granted," or regards hypotheses as dogmas. He may be said to trust somewhat hopefully in the process of inference. He still believes that, granted certain postulates, the demonstrations of Euclid successfully set forth the implications of his method. He also believes that the Euclidian method would be χαμαιλέοντα καὶ σαθρῶς ἰδρυνόμενον if it were to forego all axioms and postulates. He for one is reasonably sure that until absolute axioms are discovered, every investigation will, implicitly or explicitly, involve a nest of speculative assumptions, and that if these be examined with sufficient penetration they will be seen to take the form of metaphysical principles. He proposes now as an example in point to consider the paper of Dr. Schiller itself.

Pragmatism, says our author, is a method and involves no metaphysical hypotheses. It foregoes any assumption that there are definite relationships between mental states and their objects, or that these objects have relationships among themselves, or that a causal relation anywhere obtains, or that any quality can be ascribed to mental processes of the "truth-making" order, or "that there is a universe, *i. e.*, that we can handle what we believe to be the real by applying this notion to it" (550). And so "it is evident that nothing metaphysical is implied in the pragmatist's interpretation of either action upon or judgment about reality" (551).

Now it may be that Dr. Schiller understands by metaphysics something other than a systematic effort to coordinate our most general assumptions into logical coherence. But even apart from the question of what we conceive metaphysics to be, the catalogue of assumptions which Dr. Schiller forthwith proceeds to make has independent interest. The present writer will not presume to say whether the term metaphysical appropriately characterizes a "teleological constitution which is inevitable in *any* view of the world" (551). Or whether it be metaphysical to set up the principle: "For the mind to know the world it has to be presupposed that the

two are to some extent and in some sense commensurable" (551). Or again: "The difference between teleological and causal explanation is not one of principle. Both are *ex analogia hominis*." Or again: "If there is any commensurability, however slight, knowledge is possible and attainable in varying degrees." Again: "If the mind works teleologically . . . we shall find the world most knowable if it is assumed to work similarly" (551). These are all of them "methodological" but they also have the form and substance (albeit without the closely reasoned concatenation and weighing of evidence) of matter to be found in a Bradley or a Royce. "Why should it [Pragmatism] scruple to make a postulate which is universal and legitimate?" inquires our author. And the fact, of course, is that many such are made. The chief difficulty with non-pragmatists is to realize how certain assumptions which are avowedly contradictory can do service at the same time and under the same conditions.³

³ In this connection self-defense calls for a statement concerning the law of contradiction. Dr. Schiller, vexed by the "superficiality" of references necessarily brief in a short article, repudiates these references as "inaccurate." "Professor Warbeke . . . attributes to me a demand for the 'abrogation' of the law of contradiction which actually occurs in an exposition of Hegel!" (505). The only answer under these circumstances would seem to be to quote more *in extenso* passages in the *Formal Logic* discussed under the head: "Contradiction—as a Principle of Being, Either Meaningless or False; as a Principle of Thought, Self-contradictory." "Because all things change, they not only fail to preserve their identity, but also succeed in assuming contradictory attributes. Consequently the maxim that a thing can not be and not be *A* will only hold in cases where the thing has not changed since it was *A*. If it [Formal Logic] frankly admitted into its statement of the principle all the qualifications which may be relevant in its actual use, it would cease to have any impressiveness or meaning in the abstract. We should have to say, *e. g.*, '*A* can not be *A* and not-*A* at the same time, in the same place, in the same respect, in the same reference, in the same context, for the same persons—in short, under precisely the same circumstances; but probably such an ideal case never occurs and for heaven's sake don't ask me how little difference in any one of these respects may enable *A* to be not-*A*.' Yet it is clear that any such differences *may* vitiate an attempted application of the principle. The exact point at which a dog that eats bones will, from sheer repletion, refuse to eat another may baffle not only a formal logician but the best canine psychologist. . . . Clearly, therefore, the principle of Contradiction must not be used to dogmatize about reality, and the more it is kept out of metaphysics the better for both parties. (2) Regarded as a principle of thought, it defines the difference between affirmation and denial. Now it is an important fact, of a psychological sort, that affirmation and denial (in a sense) exclude each other. But it does not follow from this that verbally contradictory forms of affirmation and denial are incompatible. For we can never take it for granted that these forms express the real meaning of the judgments. . . . Even, however, where the two contradictory propositions were intended in their literal meaning, we saw that

The question of what is meant by good is very significant for one who writes on "The Ethical Basis of Metaphysics." In that Essay Dr. Schiller says: "Inasmuch as . . . teleological valuation is also the special sphere of ethical enquiry, *Pragmatism may be said to assign metaphysical validity* to the typical method of ethics. At a blow it awards to the ethical conception of *Good* supreme authority over the logical conception of *True* and the metaphysical conception of *Real*. For from the pursuit of the latter we may never eliminate the reference to the former. Our apprehension of the *Real*, our comprehension of the *True*, is always effected by beings who are aiming at the attainment of some *Good*, and it seems a palpable absurdity to deny that this fact makes a stupendous difference." In his criticism of my paper presumably the same author writes: "It is a further *mistake* of Professor Warbeke's *to ascribe a metaphysical intention to the doctrine* of the connection between the Real, the True and the Good, and of the supremacy of the Good. For that too is not a dogma" (552, italics added). How the sentence which follows: "The meaning intended . . . was concerned with the priority of the *epistemological* question over the *ontological*" (with which assumption the present writer is in complete accord) modifies in any way the hypothesis of an "ethical basis for metaphysics" remains a psychological riddle of the Sphinx.

To define good as the "physical well-being of humans" would indeed be protoplasmic in its crudity. And Dr. Schiller renders doubtful honor to the present writer in referring to the proposition: "The drama of creation is assumed to play about the moral character, mental attitudes, or physical well-being of humans," as follows: "Professor W. writes throughout as if good could mean nothing but the physical well-being of humans" (553). But the latter too is quite aware of the Platonic use of *ἀγαθόν* as connoting what the result would not be two contradictory meanings but no meaning at all, just because there is a contradiction. Moreover . . . in the very act of affirming the identity of *A* we are defining it over against not-*A* and excluding not-*A* from it. Thus every assertion includes a denial, *omnis determinatio est negatio*. . . . Thus to affirm is at the same time to deny, and to deny to affirm; the very law of Contradiction seems to demand its own abrogation. The paradox of the situation is well calculated to provoke that philosophic stupor which appears to be the end of philosophy as commonly understood, and Hegel had the wits to exploit it. But though he was extensively accused of denying the Law of Contradiction, his argument was not refuted. Still he did not propound a principle that should be both applicable and undeniable, and nothing less than this can content Formal Logic" (pp. 121-123).

To what extent the above is to be regarded as an "exposition of Hegel" and in what sense "Contradiction as a principle of thought is self-contradictory" thus appears to be a question of significant assertion when "All things [including minds] change." Gorgian Skepticism seems here at the door.

one would rather be or have or do than anything else. And while he conceives philosophy to have relationships to desired ends, including honorable relations among philosophers, he is endeavoring, even by pragmatic methods to discover what form of good is demonstrably the criterion of scientific and philosophical truth. The answer to this question might be of value to pragmatism itself as well as to those who "babble . . . in Cloudecuckoodom" (553) even though it only make the latter resolve that silence is best.

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SOCIETIES

THE TWENTY-EIGHTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

ABOUT one hundred and twenty-five psychologists assembled at Harvard University for the twenty-eighth annual meeting of the American Psychological Association on December 29, 30 and 31. The programme for Monday included a session for general psychology, an exhibit of new apparatus and teaching materials, a session for experimental psychology and one for intelligence tests. On Tuesday the psychologists met jointly in the morning with the American Association of Clinical Psychologists and in the afternoon with the American Anthropological Association; the evening being the occasion of the annual dinner and the address of the retiring President, Professor Walter Dill Scott, of Northwestern University. Following the close of the meetings Wednesday noon, many guests visited the Massachusetts State School for Feeble-Minded, the Judge Baker Foundation, the Carnegie Nutrition Laboratory, McLean Hospital, the Psychopathic Hospital and other institutions in the vicinity.

The programme gave 6 titles under general psychology, experimental psychology 16, intelligence tests and clinical psychology 21, comparative psychology 2, social and religious psychology 3, and applied psychology 7. The greatest interest seemed to center in the sessions for intelligence tests, clinical psychology and the work of psychologists in the service of the war and industries. Among the best contributions of the meetings were the results of work of psychologists in various phases of war activities. The pronounced development of the technique of trade-testing, the thorough tryout of intelligence tests by their use on more than a million and a half recruits, with subsequent revision of older notions of median mental levels of unselected as well as psychoneurotic, foreign-born, colored